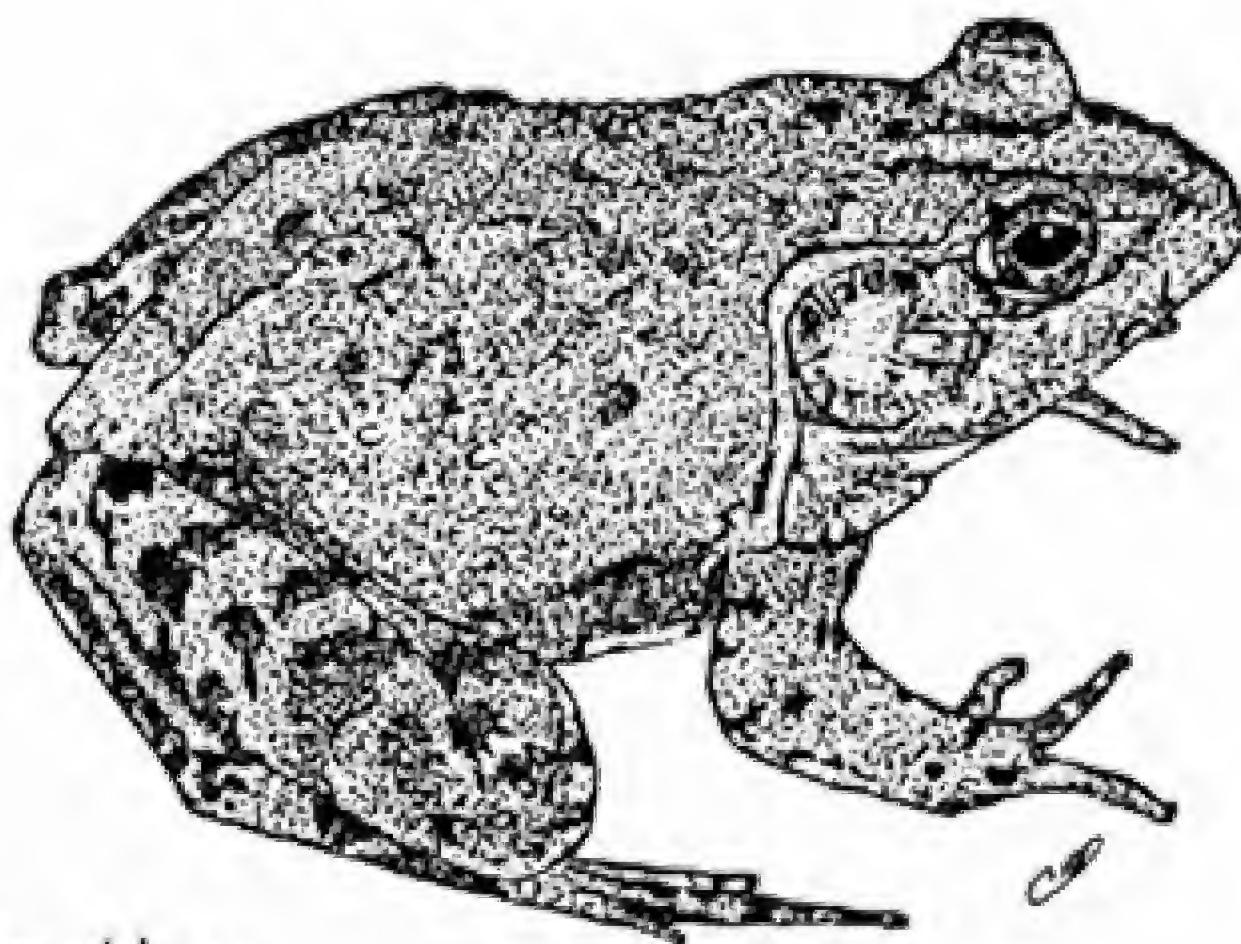


# GATESBEIANA



*Rana catesbeiana*  
P. G. S.  
1987

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## BULLETIN INFORMATION

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Manuscripts submitted for publication should be typewritten (double-spaced) on good quality 8½ by 11 inch paper, with adequate margins. Consult the style of articles in this issue for additional information, including the appropriate format for literature citations. The metric system should be used for reporting all types of measurement data. Computer diskettes (Word or WordPerfect format) are desired for longer papers. Submissions concerning the herpetofauna of selected areas, such as a park, city or county, should be prepared in article rather than field note format. Articles will be refereed by the editor and one or more qualified reviewers. All changes must be approved by the author before publication; therefore, manuscripts must be received by the editor before **March 1** and **September 1** to be considered for publication in the spring and fall issue, respectively, of *Catesbeiana*. Reprints of articles are not available, but authors may reprint their own articles to meet professional needs.

(Editorial policy continued on inside back cover)

# CATESBEIANA

Bulletin of the Virginia Herpetological Society

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Volume 26 Fall 2006 No. 2

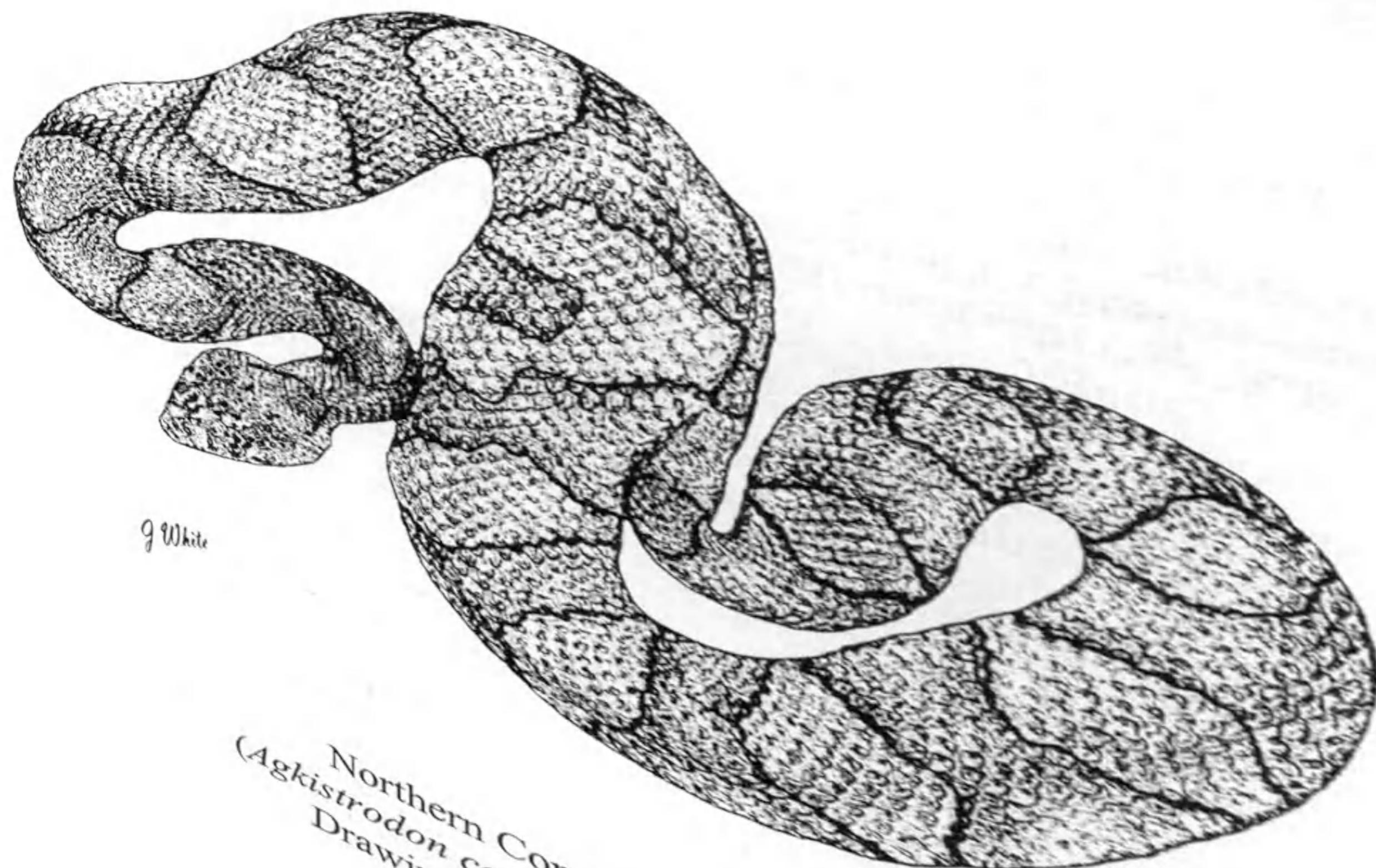
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## Next Meeting

October 21, 2006  
Longwood University  
Farmville, Virginia

See page 86 for details



Northern Copperhead  
*(Agkistrodon contortrix mokasen)*  
Drawing by John White

## Results of the 2005 Annual VHS Survey: Rappahannock River Valley National Wildlife Refuge

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The VHS was fortunate to have been invited to conduct a herpetofaunal inventory in 2005 at the Rappahannock River Valley National Wildlife Refuge in Richmond County, Virginia. Established in 1996 by the U.S. Fish and Wildlife Service, the Refuge is in the process of conducting baseline biological surveys on its current tracts totaling 3,121 hectares (7,712 acres) as part of its goal to protect and manage up to 8,094 hectares (20,000 acres) of wetlands and associated uplands along the Rappahannock River and its tributaries from Port Royal to Lancaster Creek (Figure 1). Richmond County was well suited for an intensive survey because it was lacking in county records for many species, being one of the most deficient counties in the state. No new records have been added to the county since the publication of the *Atlas of Amphibians and Reptiles in Virginia* (Mitchell and Reay, 1999).

### Study Areas

The VHS concentrated its activities around the Refuge's headquarters on the Wilna section of the Wilna/Wright Tract and secondarily on the nearby Tayloe Tract (Figure 1). The Wilna Tract is a 394 hectare (974 acres) site with a 16 hectare (40 acre) lake with public fishing, several ephemeral ponds 0.4 hectare (1 acre) in size, and 111 hectares (275 acres) of former agriculture fields currently being maintained for ground-nesting birds. The Wilna Tract provided diverse topography and habitats to survey, including open fields, regenerating and mature forested uplands and swamps, regenerating forests, open water, trash piles, and recent fire-maintained pine stands. The Tayloe Tract consists of 450 hectares (1,111 acres) southeast of the Wilna Tract with similar habitats available, including about 160 hectares (400 acres) of semi-permanently flooded hardwood bottomlands.

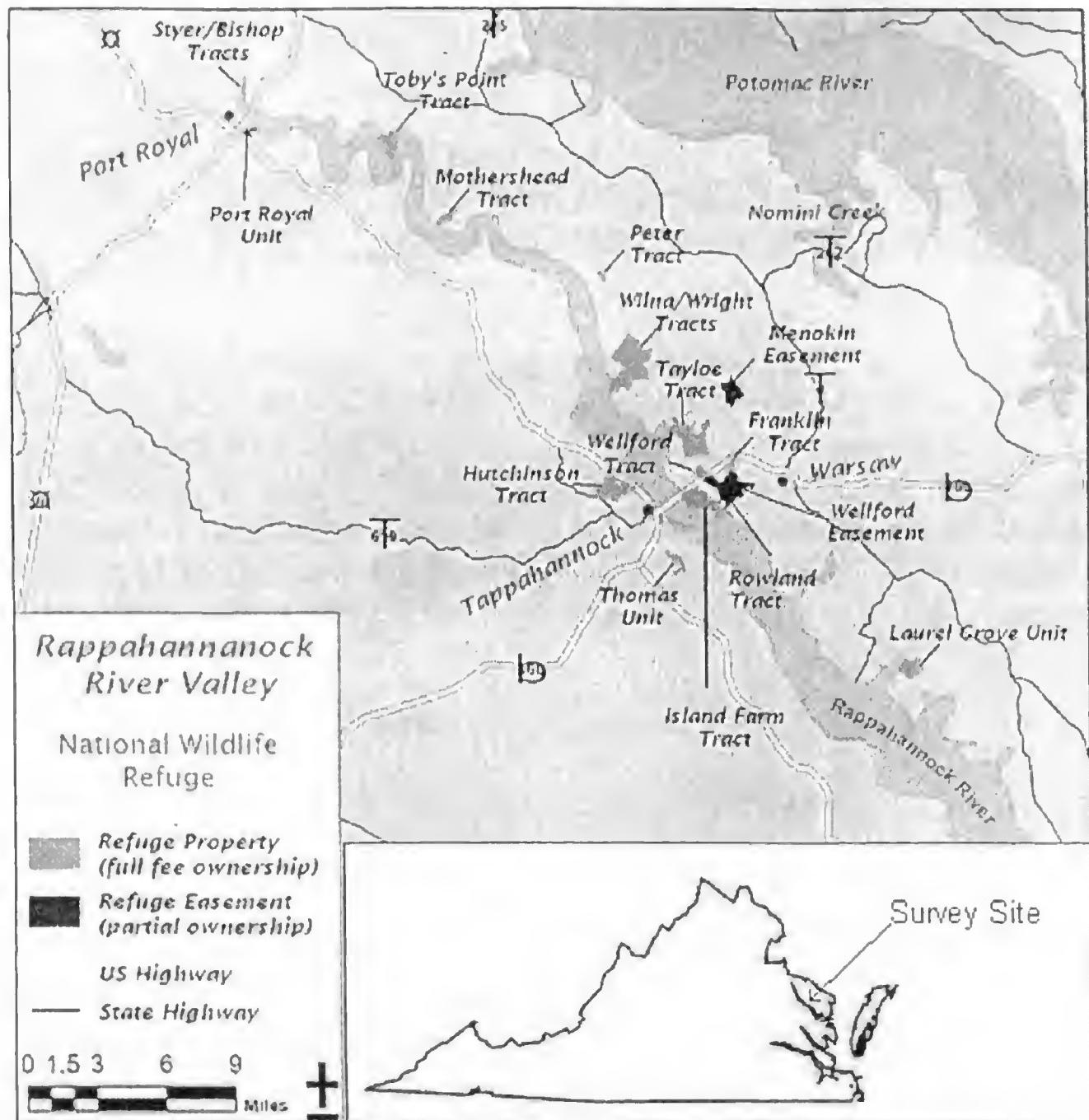


Figure 1. Map showing the complex of tracts that comprise the Rappahannock River Valley National Wildlife Refuge.

## Materials and Methods

The survey was conducted on 4-5 June 2005. On 4 June, four teams of 5-10 people sampled specific areas in the Wilna Tract delineated by geographic or habitat characteristics. On 5 June, six members surveyed the Tayloe Tract. New county records from a pre-survey reconnaissance on 15 May and a post-survey follow-up visit on 23 July (see Discussion)

## Spring 2005 VHS Survey

to the Wilna Tract are included. Collections made at the nearby Heritage Park Resort, the camping site for VHS members, are also included.

The weather on 4 June was cool ( $20^{\circ}\text{C}$ ,  $68^{\circ}\text{F}$ ) and cloudy for much of the morning. The afternoon temperature reached  $31^{\circ}\text{C}$  ( $88^{\circ}\text{F}$ ). The weather on 5 June was sunny and hot ( $\sim 33^{\circ}\text{C}$ ,  $90^{\circ}\text{F}$ ). The survey commenced at 0800 h and finished at 1700 h.

Terrestrial species were sampled by visual encounters, hand capture, and overturning cover objects such as logs, bark, and trash piles. Aquatic species were found by dip netting and turtle hoop traps baited with canned sardines (collected on 5 June). Calling frogs were also noted, although specific aural surveys were not conducted.

Digital photographs were used to document each of the species found during the survey. Although information was not recorded for every observed or captured animal (especially common species), data collected for each capture included morphometrics, microhabitat, behavior, and morphological abnormalities.

## Results

A total of 32 species was documented, with 20 species (63%) being new county records (Table 1). None of the new county records were significant range extensions nor were they beyond the expected range for the species. Most species are fairly common for the region and have records for the surrounding counties (Mitchell and Reay, 1999). All 32 species were captured at the Wilna Tract (four survey dates), three species were found at the Tayloe Tract, and six species were encountered at Heritage Park Resort.

## Annotated Checklist

All individuals listed below were captured on the Wilna Tract unless specified otherwise. Species whose names are preceded by an asterisk indicate a new county record.

Table 1. Summary of species observed during the 2005 VHS annual survey.  
NCR = new county record ; n = number of encounters.

			Amphibians
NCR	n	Frogs and Toads	
x	18	Eastern Cricket Frog	<i>Acris c. crepitans</i>
	3	Eastern American Toad	<i>Bufo a. americanus</i>
x	11	Fowler's Toad	<i>Bufo fowleri</i>
	7	Cope's Gray Treefrog	<i>Hyla chrysoscelis</i>
x	7	Green Treefrog	<i>Hyla cinerea</i>
x	2	Northern Spring Peeper	<i>Pseudacris c. crucifer</i>
x	8	American Bullfrog	<i>Rana catesbeiana</i>
	12	Northern Green Frog	<i>Rana clamitans melanota</i>
x	2	Pickerel Frog	<i>Rana palustris</i>
x	4	Southern Leopard Frog	<i>Rana sphenocephala</i>
Salamanders			
x	4	Spotted Salamander	<i>Ambystoma maculatum</i>
x	4	Red-spotted Newt	<i>Notophthalmus v. viridescens</i>
	1	Red-backed Salamander	<i>Plethodon cinereus</i>
	2	White-spotted Slimy Salamander	<i>Plethodon cylindraceus</i>
Reptiles			
Turtles			
	6	Eastern Snapping Turtle	<i>Chelydra s. serpentina</i>
	3	Eastern Painted Turtle	<i>Chrysemys p. picta</i>
x	1	Spotted Turtle	<i>Clemmys guttata</i>
	3	Eastern Mud Turtle	<i>Kinosternon s. subrubrum</i>
x	3	Northern Red-bellied Cooter	<i>Pseudemys r. rubriventris</i>
x	1	Stinkpot	<i>Sternotherus odoratus</i>
x	5	Eastern Box Turtle	<i>Terrapene c. carolina</i>
Lizards			
	5	Five-lined Skink	<i>Eumeces fasciatus</i>
x	2	Little Brown Skink	<i>Scincella lateralis</i>
Snakes			
x	3	Northern Copperhead	<i>Agkistrodon contortrix mokasen</i>
	6	Eastern Wormsnake	<i>Carphophis a. amoenus</i>
x	7	Northern Black Racer	<i>Coluber c. constrictor</i>
	3	Eastern Ratsnake	<i>Elaphe alleghaniensis</i>
	1	Eastern Kingsnake	<i>Lampropeltis g. getula</i>
x	6	Northern Watersnake	<i>Nerodia s. sipedon</i>
x	2	Rough Greensnake	<i>Opheodrys a. aestivus</i>
x	1	Northern Brownsnake	<i>Storeria d. dekayi</i>
x	2	Eastern Ribbonsnake	<i>Thamnophis s. sauritus</i>

## Amphibians

### Salamanders

#### 1. \**Ambystoma maculatum* (Spotted Salamander)

All were collected in the larval stage from three different locations in ephemeral ponds. At the time of the survey they were thought to be *Ambystoma opacum*, but a few were reared out by Paul Sattler and conclusively identified as Spotted Salamanders.

#### 2. \**Notophthalmus v. viridescens* (Red-spotted Newt)

This species was first encountered during the reconnaissance visit on 15 May, as a red eft stage in the floodplain of a stream. Two other juveniles were collected in the mature hardwood forest in the northern section of the Wilna Tract, and an adult was collected from a small pond adjacent to a field.

#### 3. *Plethodon cinereus* (Red-backed Salamander)

A single individual was found under a log adjacent to a large field.

#### 4. \**Plethodon cylindraceus* (White-spotted Slimy Salamander)

One adult and one juvenile were found under logs adjacent to a large field.

### Frogs

#### 5. \**Acris c. crepitans* (Eastern Cricket Frog)

A total of 18 encounters were recorded for the species, most of which were simply visual observations without being captured. This species was abundant in all areas adjacent to water and subsequently the numbers of encounters were probably not recorded accurately and are an underestimate of their actual abundance.

6. *Bufo a. americanus* (Eastern American Toad)

Two individuals were captured, and the call was recorded near an ephemeral pool.

7. \**Bufo fowleri* (Fowler's Toad)

This was one of the most abundant anurans in the survey with eleven encounters, and was equally found among upland sites and near ponds and ditches throughout the site.

8. *Hyla chrysoscelis* (Cope's Gray Treefrog)

This species eluded capture as an adult and was only heard calling mostly along the mature hardwood forests in the north. A single tadpole was captured in a medium-sized pond containing a monotypic stand of Arrow Arum (*Peltandra virginica*).

9. \**Hyla cinerea* (Green Treefrog)

Seven individuals were captured in five locations and most were found within thick herbaceous vegetation. One individual was found under a pipe near a roadside ditch.

10. \**Pseudacris c. crucifer* (Northern Spring Peeper)

Only two individuals were captured, one of which was a juvenile on the edge of a field adjacent to a swamp.

11. \**Rana catesbeiana* (American Bullfrog)

This species was captured four times and heard four times. Three adults were found at the large lake in the north, and an adult and a tadpole were found in a pond to the south surrounded by fields.

12. *Rana clamitans melanota* (Northern Green Frog)

Green frogs had the second highest number of encounters (four capture records and eight call records). Two adults and a juvenile were captured

in the same large pond as the bullfrogs, and one was found in the ditches along the entrance road.

13. \**Rana palustris* (Pickerel Frog)

Two adults were captured in the mature hardwood forest in the north.

14. \**Rana sphenocephala* (Southern Leopard Frog)

Two individuals were captured and two were heard calling. One juvenile was captured in the ditches along the entrance road and another was found in an ephemeral pond in the south.

## Reptiles

### Turtles

15. *Chelydra s. serpentina* (Eastern Snapping Turtle)

Five snapping turtles were encountered including one digging a nest close to the entrance road, one found in a field a few hundred meters from water, and a juvenile found in the same small body of water as a Spotted Salamander larva. An additional individual was found road-killed 1.3 km east of Heritage Park Resort on Route 624.

16. *Chrysemys p. picta* (Eastern Painted Turtle)

Two adults were spotted basking in the large 16 ha pond. One dead individual was found on the border of the forest and field nearest to the pond.

17. \**Clemmys guttata* (Spotted Turtle)

An adult male was found crawling along the ditch beside the entrance road during the reconnaissance visit on 15 May.

18. *Kinosternon s. subrubrum* (Eastern Mud Turtle)

Three individuals were encountered at separate locations: one in a shallow

pond in an open meadow, one nesting at Cat Point on the Tayloe Tract, and one at the Heritage Park Resort.

19. \**Pseudemys r. rubriventris* (Northern Red-bellied Cooter)

Three individuals were encountered. A gravid female was trapped on 5 June. Another gravid female was found in a field and was likely migrating to a nesting site. A large shell found within 100 m of the Rappahannock River was originally considered to be an Eastern River Cooter (*Pseudemys concinna concinna*), but was later determined to be a Red-bellied Cooter. Eastern River Cooters are found farther upstream on the Rappahannock River (Mitchell and Reay, 1999). If the shell was indeed an Eastern River Cooter, it is likely the shell could have been washed downstream and deposited at the survey site.

20. \**Sternotherus odoratus* (Stinkpot)

A gravid female was trapped on June 5 in the 16 ha lake.

21. \**Terrapene c. carolina* (Eastern Box Turtle)

Three individuals and one shell were encountered. Adults were found in the floodplain of a stream and near a ditch along the entrance road. One additional adult male was captured at Heritage Resort Park.

## Lizards

22. *Eumeces fasciatus* (Five-lined Skink)

Four individuals were encountered, mostly in woody debris piles in the north. One adult female with a truncated tail was found under a log in the recently burned pine forest in the south near the Rappahannock River.

23. \**Scincella lateralis* (Little Brown Skink)

One individual was found on the Wilna Tract in a ravine between a pond and a field, but was not vouchered. A second individual was found at the Heritage Park Resort with a truncated tail.

## Snakes

### 24. \**Agristostrodon contortrix mokasen* (Northern Copperhead)

An adult copperhead was found during the reconnaissance visit near the 16 ha lake. The snake was coiled in tall herbaceous vegetation on the edge of mowed turfgrass, approximately 10 m from a walking trail. On 4 June, a large male copperhead (99.6 cm, 650 g) was found on the edge of a field. The snake provided the highlight of the day after it was "tubed" (restraint device) for the VHS members to touch and observe up close. A third copperhead was found under a log on top of the mulch pile on the edge of the field behind the headquarters. Mitchell (1994) reported an unvouchered record for this species from Richmond County.

### 25. *Carphophis amoenus amoenus* (Eastern Wormsnake)

Adult wormsnakes were the second-most captured snake during the survey, but all were found in one area, the mature hardwood forest in the north. The snakes were found almost exclusively in rotting logs.

### 26. \**Coluber c. constrictor* (Northern Black Racer)

This was the most abundant snake encountered during the survey. In the southwestern portion of the site, most were found on the edges of fields, basking where they could quickly retreat into the forest. A dead adult male racer, apparently recently predated upon, was found with a freshly missing patch of skin on its neck. The Refuge has several birds of prey active in the immediate vicinity as evidenced by several fish carcasses on the shore of the Rappahannock River at the extreme southwest corner of the site, within 100 meters of the location of the dead racer. Another racer was encountered at the Tayloe Tract, actively foraging in tall grass in a field.

Most of the racers found during the survey were in the "blue" phase of ecdysis and many of them showed extensive skin lesions, including a juvenile at Heritage Park Resort with an encrusted eye. Interest in the etiology of the lesions has prompted a thorough investigation by VHS members (see Discussion). Other diseased snakes are described in the Eastern Kingsnake and Eastern Ribbonsnake accounts.

27. *Elaphe alleghaniensis* (Eastern Ratsnake)

Two individuals were encountered, one in the barn next to the refuge headquarters, a short distance from the survey meeting spot. The second snake was found at the Tayloe Tract in the same area as the nesting mud turtle. Upon release, it quickly ascended an Eastern Red-cedar (*Juniperus virginiana*).

28. *Lampropeltis getula getula* (Eastern Kingsnake)

A single kingsnake was found under tin associated with a dilapidated house on the eastern side of the Wilna Tract by the Rappahannock River. Like the black racers, the snake had numerous lesions under the surface of the scales throughout the ventrum of the body. It passively defended itself by coiling around its head and did not attempt to crawl away or bite.

29. \**Nerodia s. sipedon* (Northern Watersnake)

As expected, this species was abundant near the 16 ha lake, but none were captured. A copulating pair was observed and photographed along the rip rap of the spillway. One individual was also encountered along the ditches of the main entrance road.

30. \**Opheodrys a. aestivus* (Rough Greensnake)

One live Rough Greensnake was captured in a thicket of blackberry (*Rubus* sp.) and Black Locust (*Robinia pseudoacacia*) adjacent to a recent controlled burned area. Another individual was found dead in a recently mowed path in a field.

31. \**Storeria d. dekayi* (Northern Brownsnake)

A juvenile-sized individual was captured during the follow-up survey on 22 July under a cinderblock next to a heavy equipment shed. This is a new county record according to Mitchell and Reay (1999), but the species was reported from the county by Linzey and Clifford (1981), Tobey (1985), and Mitchell (1994; specified as an unvouchered record).

## Spring 2005 VHS Survey

### 32. \**Thamnophis s. sauritus* (Eastern Ribbonsnake)

Two individuals were captured, one on the edge of the 16 ha lake, and the other on the border of a field and forest. The latter was diseased similar to the black racers and kingsnakes described above. This individual was especially lethargic and had an apparently inoperative left eye that was fixed in the down position.

## Discussion

This survey was successful in terms of adding significantly to the herpetofaunal records for Richmond County. The VHS was also able to contribute to the Refuge's Comprehensive Conservation Plan. Of the 21 species of reptiles and amphibians previously documented for Richmond County (Mitchell and Reay, 1999), the VHS encountered 12 of them (57%) and added an additional 20 species, effectively doubling the known species richness for the county. At least half of the species collected in every order of amphibian and reptile was a new county record (Table 2). It is important to note that the number of new county records found during the 2005 survey was the result of an intensive survey performed in a previously undersampled county, and not from extraordinary efforts or new trapping techniques.

Table 2. Summary of herpetofauna observed during the 2005 VHS annual survey. NCR = New County Records.

	Total	NCR
	32	20
<b>Amphibians</b>	<b>14</b>	<b>9</b>
Frogs	10	7
Salamanders	4	2
<b>Reptiles</b>	<b>18</b>	<b>11</b>
Turtles	7	4
Lizards	2	1
Snakes	9	6

Several observations were made during the survey and not included in the final analysis due to inconclusive identification in the field or lack of photo vouchers. A possible Southern Two-lined Salamander (*Eurycea cirrigera*) and Eastern Gartersnake (*Thamnophis sirtalis sirtalis*) were

listed only as observed and were not accompanied with photographs. Both of these would have been the sole specimens collected for each species, and new county records, if they were captured and photographed. A chorus frog (*Pseudacris* sp.) was found in the northern section of forest, but it was not positively identified.

The Tayloe Tract was not surveyed as intensively as the Wilna Tract. With few returning participants and hot temperatures, the number of species encountered was significantly lower than during the same amount of survey time at the Wilna Tract on the previous day. However, numerous observations of predicated turtle nests were made, especially in the Cat Point area.

A repeating theme in the results of this survey is the herpetofaunal utilization of anthropogenically disturbed habitats, including the margins of forest and maintained fields, an artificial pond, ditches along an entrance road, structures and debris, and controlled burned areas. More amphibians and reptiles were found along the interface of mature forests and the former agriculture fields. This habitat type was ubiquitous throughout the site, and should be an area of concentrated efforts in future surveys. This would be especially important at sites where the forest/field interface is limited and concentrates the activities of species that utilize that habitat type, such as basking snakes.

This survey was spectacular for the number of new county records documented in a single day. A secondary area of interest that developed from this survey, and which could have profound implications on herpetofaunal conservation, concerns diseases in wild snakes. Thorough investigations of diseases in wild snakes in the literature are lacking, prompting Dr. Joy Ware of Virginia Commonwealth University (with field assistance from numerous other VHS members) to initiate the collection of biopsies of external skin lesions from diseased snakes at the Wilna Tract and other properties in the Refuge system. It was on the first visit (23 July) for collecting biopsies that the Northern Brownsnake was found. Findings from the collected specimens will be used to investigate the root causes of the lesions. It is important to note that the spring of 2005 was unusually cool and wet, which likely contributed to the dermal infections that are also commonly seen in captive snakes kept under similar conditions.

## Spring 2005 VHS Survey

### Acknowledgments

The VHS would like to thank Sandy Spencer of the USFWS for inviting the Society and coordinating much of the survey. The Rappahannock Wildlife Refuge Friends graciously served lunch to the VHS members. Tim Christensen provided much-needed assistance with the coordination of the survey. Mike Clifford assisted with the survey coordination and supplied GPS receivers and computer equipment for the meeting.

The following VHS members and volunteers participated in the survey: Ray Bartholomew, Mitch Bowling, Nick Christensen, Tim Christensen, Mike Clifford, David Dawson, Noah Dawson, David Dawson, Jr., Stephanie Day, Lora DeVan, Colm DeVan, Chris d'Orgeix, Jason Gibson, Mark Gibson, Connie Grimm, Elizabeth Lowe, Don Mackler, Shelly Miller, Wendy Mooring, Vincent Passaro, Jennifer Pennington, Leeanna Pletcher, Carol Pollio, Paul Sattler, Sandy Spencer, Jeff Streicher, David VanGelder, Wesley VanGelder, Dean Walton, Joy Ware, Susan Watson, John White, Jennifer White, Amy White, Charise White, Greg Woodie.

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# **Herpetofauna of Logged and Unlogged Forest Stands in South-central Virginia: Preliminary Results**

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## **Introduction**

In Virginia, more than 75% of commercial forestland is owned by non-industrial private forest landowners (NIPFs) (Thompson and Johnson, 1996). The average size of these forest tracts is 88 ha, but it is highly skewed towards small tracts, with 62% being less than 40 ha. NIPFs are diverse and include forestlands on residential property, farms, ranches, hunting club tracts, and scout reservations. Regardless of ownership category, observing and protecting wildlife ranks high among the forest ownership objectives for these NIPF landowners (Jones et al., 1995). Timber harvesting operations on these lands are usually planned by loggers and landowners with no supervision or advice from foresters or wildlife biologists (Esseks and Moulton, 2000). For landowners and loggers, and the public in general, amphibian and reptile species are perhaps the most poorly understood and unappreciated of all vertebrate wildlife groups. These animals are also likely to be one of the most responsive wildlife taxa to logging. Because logging opens the forest canopy and increases solar radiation to the understory, some amphibian species may be negatively affected by logging because of reduced humidity (Petranka et al., 1994; Knapp et al., 2003). In contrast, reptiles may benefit from logging because of an increase in basking areas, as well as increased cover in the form of logging slash and increased understory plant cover (Enge and Marion, 1986; Loehle et al., 2005).

More information is needed to determine how different species of wildlife respond to timber harvesting and what thresholds of logging need to be maintained to retain species on NIPF lands in Virginia. The objective of this study was to compare the abundance, species richness, and species

## Herpetofauna of Logged and Unlogged Forested Stands

composition of amphibians and reptiles on logged and unlogged NIPF lands in the southern Blue Ridge and Upper Piedmont physiographic provinces of Virginia.

### Methods

The study was conducted during May-August of 2004 and 2005. Most study sites were located in Franklin County, with some sites located in Henry and Patrick counties. Individual natural hardwood forest stands 12-40 ha were selected for study. Care was taken to make sure that the forest stands had similar stand composition that included hardwood tree species along with some scattered white pine (*Pinus strobus*) and Virginia pine (*Pinus virginiana*). A total of 18 forest stands was identified with harvest intensities ranging from no harvesting (100% of original overstory cover) to clearcutting (0% overstory cover). Logged stands were all recently harvested (no earlier than 2002). Unlogged stands were all mature hardwood stands that had not been harvested in recent history, although some may have had some light selective cutting in the 1960s or 1970s. In 2004, we sampled ten logged stands and eight unlogged stands. In 2005, we sampled nine logged stands and nine unlogged stands. Of the 18 sites sampled in 2004, 13 were resampled in 2005.

Time-constrained searches were used on each site to sample reptiles and amphibians. In both years, each site was searched for four-person hours twice between May 15 and August 20 (Ross et al., 2000). Typically, 2-4 people were involved in an individual search. Searches were conducted between late morning and early afternoon and the two searches were separated by at least one month. Searches involved scanning the forest floor and trees for herpetofauna and looking under likely cover objects, such as rocks, fallen logs, and loose bark. If a site had a stream or pond, these areas were also searched. In some cases, such as for frogs, calls were also used in lieu of sightings. Variation in precipitation and temperature were random variables affecting the data. These variables were not controlled for in the study except that searches were not conducted during rain events or if rainfall had occurred during the day of the search. The number of individuals counted during the two searches of each site was summed for each year of the study.

## Habitat Variables

Vegetation cover data were collected at approximately 10 locations in each stand. Percentage overstory (>10 m tall) tree cover and midstory (2-10 m tall) cover were estimated using a transparent densiometer. Percentage shrub (0.5 – 2 m tall) cover and ground (<0.5 m tall) cover were estimated visually to the nearest 5% using a 1m<sup>2</sup> sampling frame. Woody debris cover >5 cm in diameter was estimated using approximately ten 50 cm-line-intercept transects within which the diameter of each woody debris item was measured. Woody debris cover was calculated as an index that includes the sum of all diameters along all transects divided by the number of transects.

## Results

Logged stands had nearly three times the percentage of herbaceous layer cover and amount of large woody debris as unlogged stands (Table 1). Unlogged stands had three times the percentage of overstory cover and twice the percentage of midstory cover as logged stands. Percent shrub cover was similar in logged and unlogged stands.

Table 1. Percent vegetation cover at different forest layers and woody debris volume in recently logged and unlogged stands in Franklin, Henry, and Patrick counties, Virginia. Overstory cover included vegetation cover >10 m tall; midstory cover included vegetation cover >2 m and <10 m tall; shrub layer cover included vegetation cover >0.5 m and <2 m tall; herbaceous layer cover included vegetation cover <0.5 m tall. Means are presented with  $\pm$  1 standard deviation (range). Sample size = 10.

Variable	Logged	Unlogged
Overstory cover (%)	27 $\pm$ 21.7 (0-55)	74 $\pm$ 15.0 (54-96)
Midstory cover (%)	35 $\pm$ 29.5 (0-84)	75 $\pm$ 12.1 (55-92)
Shrub layer cover (%)	28 $\pm$ 14.8 (7-53)	25 $\pm$ 16.4 (5-57)
Herbaceous layer cover (%)	51 $\pm$ 26.1 (13-78)	18 $\pm$ 11.5 (5-46)
Woody debris index	199 $\pm$ 51.1 (136-282)	68 $\pm$ 27.6 (18-107)

Herpetofauna of Logged and Unlogged Forested Stands

2004

In 2004, 11 reptile and 11 amphibian species were found during our searches (Tables 2 and 3), including 804 individual amphibians and 72 reptiles. The American Toad (*Bufo americanus*) was the most common species of amphibian, comprising 40% of all individuals observed. *Desmognathus* salamanders (predominantly consisting of the Northern Dusky Salamander [*Desmognathus fuscus*], but perhaps also some Seal Salamanders [*Desmognathus monticola*]) were the next most common amphibian species representing 34% of all amphibian captures. The Eastern Box Turtle (*Terrapene carolina*) was the most common reptile, representing 28% of all individuals.

Mean reptile abundance in logged stands was 33% higher than in unlogged stands (Table 3). Mean amphibian abundance was 45% higher

Table 2. Number of amphibians observed during time-constrained searches in logged and unlogged forest stands in Franklin, Patrick, and Henry counties, Virginia. The number of sampled stands is indicated in parentheses.

Common name	Scientific name	2004		2005	
		Logged (8)	Unlogged (10)	Logged (9)	Unlogged (9)
American Toad	<i>Bufo americanus</i>	197	124	45	3
Cope's Gray Treefrog	<i>Hyla chrysoscelis</i>	4	21	4	0
Spring Peeper	<i>Pseudacris crucifer</i>	1	2	0	0
American Bullfrog	<i>Rana catesbeiana</i>	13	5	4	5
Green Frog	<i>Rana clamitans</i>	58	26	46	11
Pickerel Frog	<i>Rana palustris</i>	40	7	40	19
Spotted Salamander	<i>Ambystoma maculatum</i>	0	0	0	2
Red-spotted Newt	<i>Notophthalmus viridescens</i>	4	8	0*	3
Northern Dusky Salamander/ Seal Salamander	<i>Desmognathus fuscus/</i> <i>D. monticola</i>	106	167	65	134
Southern Two-lined Salamander	<i>Eurycea cirrigera</i>	2	1	5	1
Spring Salamander	<i>Gyrinophilus porphyriticus</i>	1	2	0	0
White-spotted Shiny Salamander	<i>Plethodon cylindraceus</i>	1	10	2	33
Total amphibians		431	373	211	211

\* - observed in a logged stand, but not during time-constrained searches

in logged stands than unlogged stands (Table 2). Reptile species richness and amphibian species richness were similar for logged and unlogged stands. All amphibian species were found in both logged and unlogged stands. For reptiles, the Eastern Kingsnake (*Lampropeltis getula*), Queen Snake (*Regina septemvittata*), and Red-bellied Snake (*Storeria occipitomaculata*) were only found in logged stands. One Northern Black Racer (*Coluber constrictor*) was found in an unlogged stand, but not during a time-constrained search.

### 2005

In 2005, 11 reptile and 10 amphibian species were found during searches of the study sites (Tables 2 and 3), including 422 amphibians and 56 reptiles. *Desmognathus* salamanders were the most common amphibians, comprising 48% of all individuals observed. The Eastern Fence Lizard (*Sceloporus undulatus*) was the most common reptile, representing 23% of all individuals. A Northern Copperhead (*Agkistrodon contortrix*) was captured inside a Sherman live mammal trap at one of the logged sites, but this species was not otherwise observed during the time-constrained searches. Reptile abundance in logged stands averaged nearly twice that of unlogged stands (Table 3). Mean amphibian abundance was similar in logged and unlogged stands (Table 2). Neither reptile nor amphibian species richness appeared to differ between logged and unlogged stands.

For amphibians, Cope's Gray Treefrog (*Hyla chrysoscelis*) was found only in logged stands, whereas the Spotted Salamander (*Ambystoma maculatum*) was observed only in unlogged stands. The White-spotted Slimy Salamander (*Plethodon cylindraceus*) was more abundant in unlogged compared to logged stands. For reptiles, the Eastern Ratsnake (*Elaphe alleghaniensis*), Little Brown Skink (*Scincella lateralis*), Eastern Milksnake (*Lampropeltis triangulum*), Northern Copperhead, Red-bellied Snake, and Smooth Earthsnake (*Virginia valeriae*) were documented only in logged stands. The Five-lined Skink (*Eumeces fasciatus*) was more abundant in logged compared to unlogged stands.

For both years, observations of amphibians appeared to be largely driven by whether streams or ponds were located on or adjacent to the site rather than whether the stand was logged or not. Even intensively logged stands with streams or ponds had relatively large numbers of amphibians (Table 4).

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Table 3. Number of reptiles observed during time-constrained searches in logged and unlogged forest stands in Franklin, Patrick, and Henry counties, Virginia. The number of sampled stands is indicated in parentheses.

Common name	Scientific name	2004		2005	
		Logged (8)	Unlogged (10)	Logged (9)	Unlogged (9)
Eastern Box Turtle	<i>Terrapene carolina</i>	8	12	5	5
Five-lined Skink	<i>Eumeces fasciatus</i>	7	4	8	4
Eastern Fence Lizard	<i>Sceloporus undulatus</i>	6	6	12	3
Little Brown Skink	<i>Scincella lateralis</i>	0	0	1	0
Northern Copperhead	<i>Agkistrodon contortrix</i>	0	0	0*	0
Eastern Wormsnake	<i>Carphophis amoenus</i>	7	7	3	2
Northern Black Racer	<i>Coluber constrictor</i>	0	0*	0	0
Ring-necked Snake	<i>Diadophis punctatus</i>	3	3	2	5
Eastern Ratsnake	<i>Elaphe alleghaniensis</i>	1	2	1	0
Eastern Kingsnake	<i>Lampropeltis getula</i>	2	0	0	0
Eastern Milksnake	<i>Lampropeltis triangulum</i>	0	0	1	0
Queen Snake	<i>Regina septemvittata</i>	1	0	0	0
Red-bellied Snake	<i>Storeria occipitomaculata</i>	1	0	2	0
Eastern Gartersnake	<i>Thamnophis sirtalis</i>	1	1	0	0
Smooth Earthsnake	<i>Virginia valeriae</i>	0	0	2	0
Total reptiles		37	35	37	19

\* - observed in one stand, but not during time-constrained searches

Table 4. Mean number of amphibians observed on stands with and without streams and ponds on logged and unlogged stands in Franklin and Henry counties, Virginia in 2004 and 2005.

	2004				2005			
	Logged		Unlogged		Logged		Unlogged	
Water sources	Mean # amphibians	# sites						
No ponds or streams	2.0	2	2.7	3	1.5	2	8.5	2
Ponds only	125.0	1	168.0	1	84.0	1	22.0	1
Streams only	46.7	5	33.8	5	17.8	5	32.4	5
Ponds and streams	237.0	1	27.0	1	14.0	1	10.0	1

## Discussion

Each species has specific habitat requirements for food, water, cover, and nesting sites, and the availability of these habitats is changed by timber harvesting (Hunter, 1990). For example, logging will decrease the amount of overstory tree cover, but typically increases understory ground cover and food plants and will add large amounts of woody debris to the forest floor (Ross et al., 2000). Logging may increase sedimentation of streams, negatively affecting aquatic salamanders, but depressions created by logging machinery may fill with water and provide habitat for some frog species (Fredericksen et al., 2000; Ross et al., 2000). Populations of some amphibian and reptile species may decline due to logging-induced changes, but others will be unaffected or enhanced (Ross et al., 2000).

The results of this study indicate variability in herpetofaunal populations between years, as well as high variability among sites. The most important variable in determining overall abundance of amphibians in this study was the presence of ponds and streams, rather than logging. For timber stands being harvested in Virginia, retention of at least 50% of tree basal area is required along stream courses (Virginia Department of Forestry, 2002), which may have provided sufficient cover for aquatic or semi-aquatic salamander species. The abundant Northern Dusky Salamander was always present if a stream occurred within the forest stand, although this species was more abundant in unlogged stands. Other species, such as the Southern Two-lined Salamander (*Eurycea cirrigera*), Spring Salamander (*Gyrinophilus porphyriticus*), and Spotted Salamander, were only found near streams in this study. Slightly more than half of both logged and unlogged stands had a stream on the site and each of these streams had *Desmognathus* salamanders. There was a tendency for more *Desmognathus* salamanders in unlogged stands compared to logged stands in both years of this study. Stream salamanders can be negatively affected by stream sedimentation (Orser and Shure, 1972; Corn and Bury, 1989), but we did not record data on stream sedimentation in this study.

The presence of a pond within, or adjacent to, a stand also appeared to determine the abundance and species richness of anurans. Pickerel Frogs (*Rana palustris*) and Green Frogs (*Rana clamitans*) appeared to use deep ruts on trails created by logging machinery for breeding habitat.

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However, it is not certain whether these frogs bred successfully in these areas. Mitchell et al. (1997) reported that maintenance of amphibian diversity in central Appalachian forests requires mature hardwood forests and wetland habitats. Except for terrestrial salamanders, however, we found that the abundance of amphibians was linked mostly to the presence of wetlands within or adjacent to stands, regardless of the presence or density of mature trees.

The larger number of toads observed in 2004 compared to 2005 was mostly responsible for the higher number of amphibians captured during 2004. The increased number of toads appeared to be due to the timing of the searches. Two searches in 2004 corresponded with the dispersal of recently metamorphosed toads from ponds on both a logged and unlogged site, resulting in hundreds of toads found during searches. Large numbers of frogs dependent on ponds at some sites, such as the Green and Pickerel frogs, and the abundant *Desmognathus* salamanders on sites with streams, also made it difficult to separate the effect of logging from the effect of the presence of wetland areas in this study.

Several studies have documented decreases in terrestrial salamander species following logging, particularly following clearcutting (Pough et al., 1987; Ash 1988; Petranka et al., 1993, 1994). Ross et al. (2000) found a significantly higher abundance of salamander species in unlogged compared to logged stands in NIPF stands in Pennsylvania, as well as a significant negative correlation between salamander abundance and overstory cover. Contrary to these studies, Chazal and Niewiarowski (1998) found that Mole Salamanders (*Ambystoma talpoideum*) were not adversely affected by clearcutting. On our study sites, there was only one terrestrial salamander species found, the White-spotted Slimy Salamander. More individuals of this species were found on unlogged stands compared to logged stands. Ash (1988) found that the closely related Slimy Salamander (*Plethodon glutinosus*) disappeared after clearcutting in hardwood forests in North Carolina. This species requires moist habitats because its skin functions as the sole respiratory organ (Petranka et al., 1994). Because of increased insolation as more trees are removed, moist microhabitats required for this species are likely to become scarce in more intensively logged stands. Interestingly, no Red-backed Salamanders (*Plethodon cinereus*) were found on any stand in either year of our study although they appear to have been well-

documented in all three counties included in our study (Mitchell and Reay, 1999). Cope's Gray Treefrog was more numerous in unlogged stands than logged stands in 2004, but was only found in logged stands in 2005.

Few snakes were observed during our searches. With the exception of the Ring-necked Snake (*Diadophis punctatus*) and Eastern Wormsnake, most snake species were found only in logged stands. The only Queen Snake found in the study was located under a rock in a stream on a stand with moderate logging intensity. Higher snake abundance in logged stands concurs with observations by Ross et al. (2000) in northeastern Pennsylvania and by Enge and Marion (1986) in northern Florida. Lizards were also more abundant in logged stands. Eastern Box Turtles occur in many habitats throughout the eastern United States (Dodd, 2001), although Phelps and Lancia (1999) found that they preferred uncut areas compared to clearcuts in a study of bottomland forests in South Carolina. In our study, Eastern Box Turtles occurred with similar abundance in both logged and unlogged stands and some of these turtles occurred in intensively harvested stands. The abundance of reptiles in logged stands is understandable given their need for thermoregulation in order to forage and perhaps a higher abundance of insects on downed logs (Ross et al., 2000). Most stands in this study provide for close juxtaposition of exposed habitats for basking with cover habitats for shade and foraging.

Our study was limited by several factors, including a seasonal sampling period that may have excluded some species, a limited sample size, and only two summers of sampling. Despite the limitations of the data, our study indicates that stream and pond breeding areas are important determinants of the abundance and species richness of amphibians, regardless of the occurrence of logging. There tended to be more White-spotted Slimy Salamanders on unlogged stands compared to logged stands. While infrequently found during our searches, snake and lizard species abundance and richness tended to be higher on logged stands compared to unlogged stands. We plan to continue sampling these stands as a long-term monitoring project, particularly to determine how the local herpetofauna responds as stands recover from logging disturbance.

## Herpetofauna of Logged and Unlogged Forested Stands

### Acknowledgments

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# **Observations on Snake Entanglement and Mortality in Plastic and Horticultural Netting in Virginia**

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## **Introduction**

Populations of snakes in Virginia and elsewhere have declined substantially over the past century for many reasons. Causes include but are not limited to habitat loss and alteration, persecution by humans, road mortality, illegal collection, and disease (Dodd, 1987, 1993; Mitchell, 1994; Buhlmann and Gibbons, 1997; Mitchell et al., 1999; Gibbons et al., 2000). Stuart et al. (2001) reported entanglement and mortality of six species of snakes in bird netting (13-37 mm mesh of monofilament) and poultry fencing (chicken wire) in Arizona and elsewhere as another source of snake decline. Several other species of snakes in the American Southwest that became entangled and killed in netting were noted in Bonine et al. (2004). Two species from Illinois (*Coluber constrictor*, *Lampropeltis triangulum*) and two from Ontario, Canada (*Nerodia sipedon*, *Sistrurus catenatus*), were killed while entangled in netting (Walley et al., 2005). Avian mist nets have been used to sample semi-aquatic snake populations but they have to be checked frequently to avoid stress and mortality (Lutterschmidt and Schaefer, 1996). We report here observations of several cases of entanglement and mortality of snakes in plastic and monofilament netting in Virginia and suggest that this problem could be the target of a much-needed educational program.

## Observations

On 20 May 2006, DY and CRY discovered an adult *Elaphe guttata* (Corn Snake) entangled in a piece of 13 mm square mesh erosion control plastic netting (Figure 1). This observation occurred beside a ditch along the southbound lane of U.S. Route 29, 4 km north of the Otter River Bridge in Campbell County, Virginia. A cable company had laid down the material for erosion control and to cover tracks left by one of their vehicles. The snake sustained no injuries but it was found in full sun and, if it had not been discovered and released, it presumably would have died from heat exposure. Removing the snake proved difficult. As the mesh was cut to extract the snake, it would weave itself back in and become entangled again. The snake was finally freed after repeating the cutting process several times. The Corn Snake was very docile during the encounter. Once fully removed, it moved quickly back into its habitat.



Figure 1. Corn Snake (*Elaphe guttata*) entangled in plastic netting in Campbell County, Virginia. Photo by Debbie and Connie R. Yeatts.

On 20 May 2006, JDG and other members of the Virginia Herpetological Society uncovered a tarp covering a woodpile and discovered an adult *Elaphe alleghaniensis* (Eastern Ratsnake) entangled in plastic mesh netting. The location of this observation was in the ranger work area just outside of the main park entrance of Fairystone State Park, Patrick

County, Virginia. The plastic netting was used to wrap bundles of firewood sold to campers by the park. The snake was severely entangled. Close inspection revealed that the plastic mesh was tearing the skin between the scales, causing long and deep lacerations. These wounds, starvation, or exposure would have ended the snake's life if left entangled. After photographing the snake, JDG removed the mesh with scissors and took it to another location within the park for release. The park rangers reported finding numerous snakes among the piles of firewood on previous occasions. All state parks should be informed of the wildlife problems caused by this netting material.

On 9 June 2006, JCM responded to a call from a homeowner in Northampton County, Virginia, who said that he had two snakes entangled in deer mesh in his yard. The first was an adult male *Elaphe alleghaniensis* (1296 mm total length) and the second an adult female *Heterodon platirhinos* (Eastern Hog-nosed Snake, 782 mm total length). These snakes were severely entangled in fine string, monofilament horticultural netting (often called deer netting because it is used to deter deer from eating horticultural plants). The landowner was concerned about the identification of the second snake but explained that he had cut Eastern Ratsnakes out of netting on several earlier occasions at this site and in New Jersey. Both snakes were removed easily by clipping the netting and were released locally. The Eastern Hog-nosed Snake sustained two non-life threatening injuries due to the mesh that caused lacerations in the epidermis at the mid-body and neck (Figure 2). Each laceration cut into but did not penetrate the dermal layer.

## Discussion

The use of monofilament plastic netting to deter birds and deer from eating horticultural and garden plants and for other uses is a serious cause of death in snakes that become entangled. In 1992, Fauth and Welter (1994) found a dead adult female Northern Watersnake (*Nerodia sipedon*) entangled in Bird-X™ plastic netting at Mountain Lake Biological Station (MLBS) in Giles County, Virginia, used to exclude rodents from a plant ecology experiment. Two other *N. sipedon* were found entangled during 1991-1993 at MLBS, as were a Eastern Ratsnake and Timber Rattlesnake (*Crotalus horridus*). One of the *N. sipedon* had multiple lacerations, including one on the anterior body that nearly severed the ventral and



Figure 2. Injury sustained by an adult Eastern Hog-nosed Snake (*Heterodon platirhinos*) while tangled in deer netting in Northampton County, Virginia. Photo by J.C. Mitchell.

lateral musculature (Fauth and Welter, 1994). JCM found a pair of Eastern Ratsnakes that had died, presumably from overheating, after becoming entangled in deer netting in an Amherst County, Virginia, garage in the late summer of 2003. He also witnessed another *E. alleghaniensis* entangled in deer netting that had been brought to the Wildlife Center of Virginia in Waynesboro in August 2005. Thus, at least four snake species are known to have been killed or nearly so by plastic netting in Virginia. These commonly sold materials for garden, home, and commercial use have likely caused the death of many other snakes in Virginia and elsewhere. Birds, some mammals, lizards, and turtles also suffer mortality from netting used to deter deer and birds from shrubs and fruit trees, snakes from Eastern Bluebird (*Sialia sialis*) boxes, and cats from gardens (Twedt, 1980; Fuller-Perrine and Tobin, 1993; Stuart et al., 2001). The latter authors correctly pointed out that plastic netting does not degrade and will persist for years, thus creating a long-term environmental hazard. Bird, deer, and horticultural netting is clearly a serious hazard to snakes in Virginia and elsewhere.

We advocate that an educational program or at least educational materials be developed for landowners and distributed to garden and landscape centers throughout Virginia to deal with this problem. An article in a magazine that is read by construction, highway, and wildlife managers may help instruct them on ways to avoid killing native wildlife with these materials. Additional cases of entanglement of snakes and other animals in plastic and string netting should be accumulated so that the incidence level and seasonal patterns of occurrence can be evaluated.

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## Field Notes

*Hyla gratiosa* (Barking Treefrog). VA: City of Virginia Beach, First Landing State Park. (UTM 943879 4096510). 16 June 2006. John D. Kleopfer. 20 June 2006. Anne C. Chazal.

On 16 June 2006 an adult Barking Treefrog was accidentally captured in a 9 meter (30 ft.) turtle trap at First Landing State Park (formerly Seashore State Park) in Virginia Beach, Virginia. Following up on the initial report, Anne Chazal heard 5 to 10 calling male Barking Treefrogs at the same pond on 20 June 2006. This record represents the easternmost occurrence in Virginia and the first occurrence for the City of Virginia Beach (Mitchell, J. C., and K. K. Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication No. 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.). Five digital photographs were submitted to the VHS archives (voucher #88).

It should be noted that the herpetofauna of First Landing State Park has been extensively surveyed by several reputable herpetologists (i.e., Joseph Mitchell, Kurt Buhlmann, and Chris Pague) without the Barking Treefrog having been documented. This brings into question the validity of these individuals being naturally occurring. There is a possibility they may have been introduced as a result of a person(s) releasing their unwanted pets. Although illegal, this species is occasionally sold in Virginia pet stores (Kleopfer pers. obs. 2006). Because it is unknown as to whether or not successful reproduction is occurring, there should be some caution in referring to these individuals as a population. The Virginia Department of Game and Inland Fisheries and Virginia Department of Conservation and Recreation plan to further investigate this issue.

### JOHN D. KLEOPFER

Virginia Department of Game and Inland Fisheries  
P. O. Box 276  
Barhamsville, Virginia 23011

### ANNE C. CHAZAL

Virginia Department of Conservation and Recreation  
Division of Natural Heritage  
217 Governor Street  
Richmond, Virginia 23219

Field Notes

*Eurycea longicauda longicauda* (Long-tailed Salamander). VA: Fairfax Co., McLean, Scotts Run Nature Preserve. 28 June 2004, 15 September 2004, 8 May 2005, and 24 June 2005. Jeff Lewis and Richard Lewis.

Over the course of 12 to 15 spring, summer, and fall visits to Scotts Run Nature Preserve during 2004 and 2005, Jeff Lewis, sometimes accompanied by retired zoologist Richard Lewis, found five adult and subadult Long-tailed Salamanders, one specimen on each of three visits and two specimens on 15 September 2004. We took digital photographs of each specimen and have submitted them to the VHS archives (voucher #85). All specimens were found associated with the same forested watershed of a perennial small stream fed by groundwater or spring seepage, that flows into Scotts Run. All specimens were found under logs, three directly on the bank of the stream and two up a slope, 50 and 100 feet (15 and 30 m) from the water. The specimens from 28 June 2004 and 24 June 2005 were found at locations on the same bank within about 20 feet (6 m). All specimens lacked a mid-dorsal stripe and exhibited the orange ground color and vertical herringbone marks on the tail that are typical of this species. The pattern of markings on the top of each specimen's head (as recorded in our digital photos) was unique, indicating that five separate individuals were found.

This watershed also has a significant population of Northern Two-lined Salamanders (*Eurycea bislineata*), with specimens observed on every trip. Also interestingly, we have never seen a Three-lined Salamander (*Eurycea guttolineata*) anywhere in Scotts Run over the course of these trips.

As the thorough field note by Roble and Callow (2006. Field Notes: *Eurycea longicauda longicauda* (Long-tailed Salamander). *Catesbeiana* 26: 19-20) states, the distribution of this species in northern Virginia clearly needs further study, as Fairfax County is not currently typically included in the range of this species. These additional sightings help to clarify the distribution of *E. longicauda longicauda* in this area.

**JEFF LEWIS**  
1069 W. Broad Street #754  
Falls Church, Virginia 22046

**Hemidactylum scutatum (Four-toed Salamander).** VA: Hanover Co., Glen Allen, 11105 Cauthorne Road ( $37^{\circ} 42.375' N$ ;  $77^{\circ} 35.700' W$ ; NAD83). 10 May 2006. Joy L. Ware.

On 10 May 2006 at 1820 h, I turned over a wooden log that formed a portion of the trail markers for the walking path from the front site of the Unitarian Universalist Community Church (UUCC) into the neighboring woods on the church property and found one adult *Hemidactylum scutatum*. A *Gastrophryne carolinensis* (Eastern Narrow-mouthed Toad) was also observed under the same piece of wood. Examination of the remaining logs bordering the pathway revealed three *Plethodon cylindraceus* (White-spotted Slimy Salamanders).

This is a new county record for *Hemidactylum scutatum* in Hanover County (Tobey, F. J. 1985, Virginia's Amphibians and Reptiles: A Distributional Survey. Virginia Herpetological Society, Purcellville, VA. 114 pp; Mitchell, J. C., and K. K. Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication No. 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.; *Catesbeiana* Table of Contents 1993-2006). Two digital photos were submitted to the VHS archives (voucher #84). I thank Rev. Nancy Shaffer, UUCC, and Dorothy Fillmore, Moderator of the UUCC Operating Council, for permission to submit this information.

**JOY L. WARE**  
1612 Nottoway Avenue  
Richmond, Virginia 23227

***Chelydra serpentina serpentina (Eastern Snapping Turtle).*** VA: Prince George Co., 8409 Sandy Ridge Road (County Road 646). 19 August 2006. Jonathan D. Jeffreys.

On 19 August 2006 at approximately 1023h four (two male and two female) Eastern Snapping Turtles were noted in a net trap placed in a privately-owned pond on the previous morning. The trap was placed in this pond at the request of the owner to capture any turtle species inhabiting the pond. The pond is a large (approximately 0.6 hectare) freshwater body located in Prince George County approximately 6 km

## Field Notes

east/northeast of the Fort Lee Military Reservation located between the cities of Petersburg and Hopewell. The pond is surrounded by mixed hardwood forest and lies adjacent to a tributary of Manchester Run (a potential entry avenue for this species). Air temperature on the morning of the 19th was approximately 32°C. Water temperature was 28.9°C. Weather was dry with approximately 10% cloud cover. Morphometric data were obtained on all specimens: mean carapace length was 303.5 mm; mean plastron length was 232.5 mm; mean weight was 7227.5 g.

Roble and Hobson (1998. Records of amphibians and reptiles from Fort Lee, Prince George County, Virginia. *Catesbeiana* 18: 35-42) noted several *C. s. serpentina* specimens (both adults and at least one juvenile dipnetted in a firing range pond) within the boundaries of Ft. Lee proper. Mitchell (1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 352 pp.) and Mitchell and Reay (1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication Number 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.) make note of a museum specimen collected on Ft. Lee. The current specimens represent the first vouchered accounts for this species in Prince George County. Color photographs of all specimens were obtained before they were relocated to another privately owned pond in the county. Digital photographs were deposited in the VHS archives (voucher # 93).

JONATHAN D. JEFFREYS  
P.O. Box 96  
Hopewell, Virginia 23860

*Clemmys guttata* (Spotted Turtle). VA: Amelia County, 0.33 mi (0.54 km) north of jct. Rt. 642 x Rt. 617. UTM 17S 755977 4136542 (WGS84). Spring 2001 (exact date not recorded). Mike Clifford.

In the spring of 2001 I observed and photographed a Spotted Turtle that was resting on the edge of Amelia Springs Road adjacent to a marshy beaver meadow along Little Creek in Amelia County. Spotted Turtles have been seen in this area on several other occasions. This is a new record for Amelia County (Mitchell, J.C. 1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 352 pp.; Mitchell, J. C., and K. K. Reay. 1999. Atlas of Amphibians and Reptiles in Virginia.

Special Publication Number 1, Virginia Department of Game and Inland Fisheries, Richmond, VA. 122 pp.). A digital photograph was submitted to the VHS archives (voucher # 12).

**MIKE CLIFFORD**

11131 Amelia Springs Road  
Jetersville, Virginia 23083

*Trachemys scripta scripta* (Yellow-bellied Slider). VA: New Kent Co., New Kent Forestry Center. 11301 Pocahontas Trail. Providence Forge. 6 June 2006. John D. Kleopfer and Joseph C. Mitchell.

The Yellow-bellied Slider reaches the northernmost extent of its range in southeastern Virginia (Ernst et al. 1994. Turtles of the United States and Canada. Smithsonian Institution Press, Washington, DC. 578 pp.). In Virginia, Gloucester County and the lower York-James River Peninsula are the northernmost documented occurrences of this species (Mitchell, J. C. 1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 352 pp.; Mitchell, J. C., and K. K. Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication Number 1, Virginia Department of Game and Inland Fisheries, Richmond, Virginia. 122 pp.).

On 6 June 2006, an adult female Yellow-bellied Slider was captured near an unnamed millpond at the New Kent Forestry Center in New Kent County. This observation represents a new county record and a northwestern range extension of approximately 28 km into the upper York-James River Peninsula. In addition, it extends the range approximately 10 km north of the Gloucester County record. A digital photograph was submitted to the VHS archives (voucher #87).

**JOHN D. KLEOPFER**

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## Field Notes

*Agkistrodon piscivorus piscivorus* (Eastern Cottonmouth). VA: Dinwiddie Co., Appomattox River and Canal at Appomattox Riverside Park (also known as Ferndale Park), Rt. 600 (Ferndale Road) [37.223506°N 77.477421°W]. September 2005 Randy Tench. 13 April 2006. Randy and Kelsey Tench.

As indicated during phone calls and emails with the Virginia Department of Game and Inland Fisheries (DGIF), Randy Tench observed an adult cottonmouth during his visits to Appomattox Riverside (Ferndale) Park in late summer to early fall of 2005. During the first week of October 2005, he brought a shed skin of a cottonmouth to DGIF headquarters in Richmond, which he found in the park during the week of 25 September 2005, in the area where he had previously seen this species. Dr. Barbara Savitzky (Christopher Newport University) and Dr. Alan Savitzky (Old Dominion University) subsequently verified it as a cottonmouth shed (currently in possession of Dr. Barbara Savitzky). Mr. Tench observed another cottonmouth on 13 April 2006. Digital photographs taken by his daughter Kelsey have been submitted to the VHS archives (voucher #89).

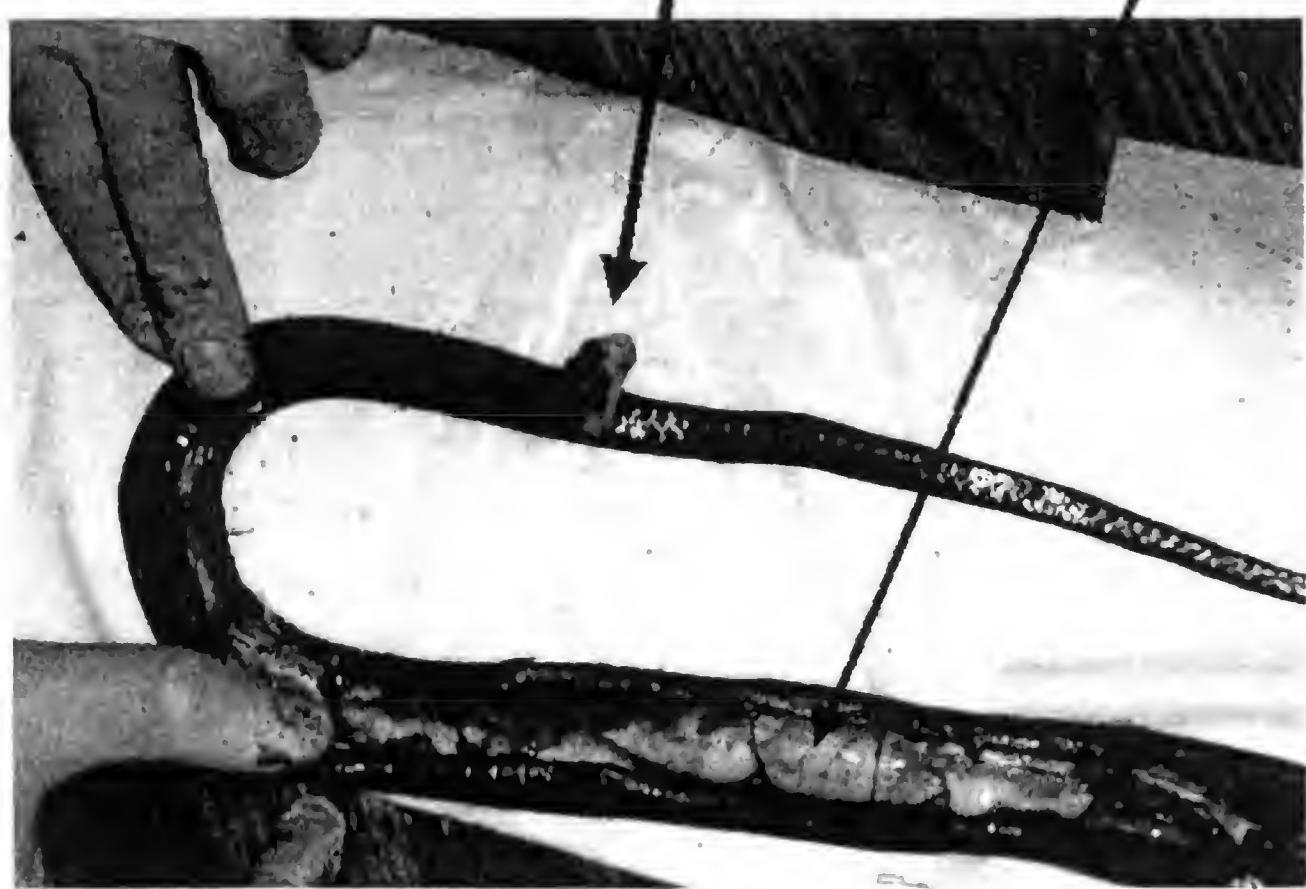
The range map for cottonmouths as prepared by Mitchell and Reay (1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication Number 1, Virginia Department of Game and Inland Fisheries, Richmond, Virginia. 122 pp.) and the records for cottonmouths in the Virginia Department of Game and Inland Fisheries' database do not include Dinwiddie County, nor any point west of the City of Colonial Heights, as being known locations for cottonmouths. This indicates a new county record and a western extension to the known range of Eastern Cottonmouths in Virginia. This location is approximately 2.6 km west of the city limits of Petersburg and approximately 0.15 km south of the Chesterfield County boundary (0.7 km south of Matoaca). Appomattox Riverside (Ferndale) Park is a property owned by the City of Petersburg, but it is located in Dinwiddie County.

**SUSAN H. WATSON**  
Virginia Department of Game and Inland Fisheries  
4010 W. Broad Street  
Richmond, Virginia 23230

***Coluber constrictor* (Northern Black Racer).** VA: City of Newport News, Fort Eustis Military Reservation, 37° 07' 10" N, 76° 35' 17" W. 31 May 2006. Timothy P. Christensen, H. Davis Massey, & Joy L. Ware.

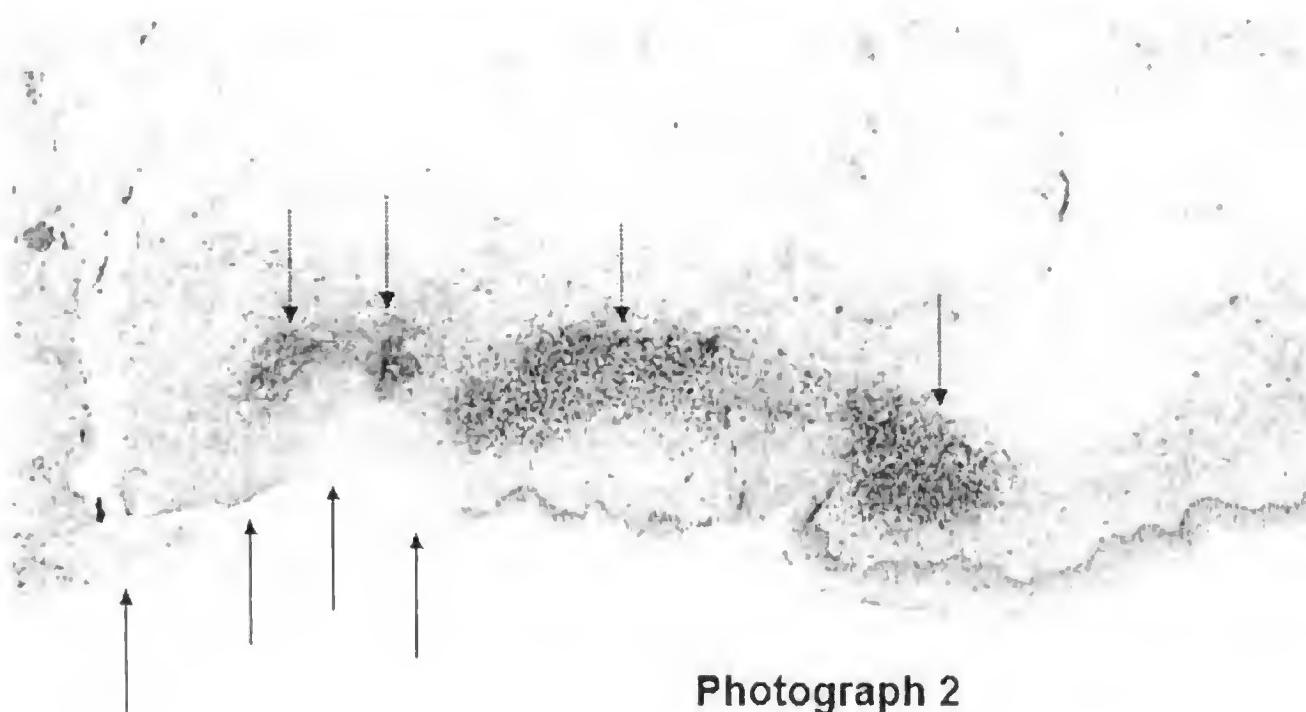
On 31 May 2006 at approximately 1100 h, an adult Northern Black Racer was found DOR on a hardened surface road bordered by mixed forest. The specimen did not exhibit significant trauma as expected from vehicular damage. Actual cause of death was uncertain, but other potential causes included it being dropped by a bird of prey or left by a mammalian predator, though no external tears or bite marks were evident. Prolapsed tissue was evident (Photograph 1). Furthermore, the specimen appeared to have died recently, because the observer had just driven by the area approximately 30 minutes earlier and the snake was not present. The total length was 1030 mm, and the SVL was 1000 mm. The air temperature was estimated at 75° F and skies were partly cloudy. The specimen was immediately refrigerated and kept under these conditions until a necropsy was performed. During dissection, 12 eggs were observed. Several eggs at the anterior portion of the body had collapsed, but some were still intact. The intact eggs measured 35 x 60 mm. One egg was opened but no embryo existed.

Photograph 1                      Prolapse Tissue                      Eggs



Field Notes

A portion of the prolapsed tissue was fixed in 10% formalin, embedded in paraffin, sectioned, and stained with hematoxylin and eosin. Microscopic examination of the prolapsed tissue (Photograph 2) showed a non-keratinizing stratified squamous mucosa with foci of submucosal chronic inflammation (top row of arrows on photograph) and mucosal ulceration (bottom four arrows), all appearing to be supported by a coat of smooth muscle. Underlying the smooth muscle coat is a hollow tube-like structure lined with a pseudo-stratified, ciliated columnar epithelial mucosa, also apparently supported by smooth muscle. Thus the prolapsed tissue consisted of portions of two organs. The presence of multiple areas of chronic inflammation suggests that the snake was responding to an ongoing illness, but whether this contributed to its death cannot be ascertained. These findings demonstrate that systematic examination of recently deceased reptiles found in the wild can provide useful opportunities to gain information about the health status of these animals.



Photograph 2

**TIMOTHY P. CHRISTENSEN**  
113 Davids Way  
Yorktown, Virginia 23692

**JOY L. WARE**  
1612 Nottoway Avenue  
Richmond, Virginia 23227

**H. DAVIS MASSEY**  
4242 Echo Ho Lane  
Richmond, Virginia 23235

*Regina septemvittata* (Queen Snake). VA: Rockbridge Co., Natural Bridge, vicinity of Cascade Creek Picnic Area along Cedar Creek Nature Trail near Route 11. 26 July 2006. Timothy and Mun Christensen.

On 26 July 2006 at approximately 1400 h, an adult Queen Snake was observed lying across a dead limb near the ground along a small stream (Cascade Creek). The snake was completely out of the water and approximately 20 feet from a small waterfall that flowed into a small shallow pool above which exposed calcium carbonate (tufa) deposits were evident. Air temperature was estimated at 90° F with clear sunny skies prevalent. The snake's body lay almost completely over the length of the dead limb with the head culminating at the end of the limb, giving the impression that it was attempting to camouflage while basking. I approached to within five feet of the snake but it remained motionless the entire time. The snake was not captured or disturbed. Three juvenile Northern Watersnakes (*Nerodia sipedon sipedon*) were also observed in the immediate vicinity, two in the shallow pool approximately 20 feet from the Queen Snake, and a third snake on rocks near the waterfall. Cascade Creek flows into Cedar Creek along the trail with Cedar Creek being considerably wider. Six additional Northern Watersnakes were observed (five basking) in the previous two hours at various points along the one-mile route of Cedar Creek Nature Trail. One large adult crayfish was observed indicating the presence of prey species for the Queen Snake.

*Regina septemvittata* was not documented for Rockbridge County by Mitchell and Reay (1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication No. 1, Virginia Department of Game and Inland Fisheries, Richmond VA. 122 pp.), Mitchell (1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 352 pp.), Tobey (1985. Virginia's Amphibians and Reptiles: A Distributional Survey. Virginia Herpetological Society, Purcellville, VA. 114 pp.) or Linzey and Clifford (1981. Snakes of Virginia. University Press of Virginia, Charlottesville. 173 pp.). A digital photograph was submitted to the VHS archives (voucher #94).

**TIMOTHY & MUN CHRISTENSEN**  
113 Davids Way  
Yorktown, Virginia 23692

Field Notes

*Storeria occipitomaculata occipitomaculata* (Northern Red-Bellied Snake). VA: Fluvanna Co., Palmyra, 27 Fleetwood Drive. 22 September 2004. Donna L. Watkins.

On 22 September 2004 at 0755 h, Donna L. Watkins found a Northern Red-Bellied Snake in the bottom of a dry, man-made pond in her back yard in Palmyra, Virginia. She reported that the snake was less than a foot long and had a bright orange belly, and submitted a digital photograph to me for identification.

This is a new county record for Fluvanna County (Linzey, D. W. and M. J. Clifford 1981. Snakes of Virginia. University Press of Virginia, Charlottesville. 173 pp.; Mitchell, J.C. 1994. The Reptiles of Virginia. Smithsonian Institution Press, Washington, DC. 352 pp.; Mitchell, J. C., and K. K. Reay. 1999. Atlas of Amphibians and Reptiles in Virginia. Special Publication Number 1, Virginia Department of Game and Inland Fisheries, Richmond, Virginia. 122 pp.). A voucher photograph has been submitted to the VHS archives (voucher #5).

**MIKE CLIFFORD**  
11131 Amelia Springs Road  
Jetersville, Virginia 23083

*Nerodia sipedon sipedon* (Northern Watersnake). VA: Richmond Co., Rappahannock River Valley National Wildlife Refuge, 38° 00' 59" N; 76° 53' 31" W. 20 May 2006. John Agee, Timothy P. Christensen, Laurence Mendoza, and Joy L. Ware. VA: City of Newport News, Fort Eustis Military Reservation, 37° 08' 02" N; 76° 35' 49" W, 23 May 2006. Timothy P. Christensen.

On 20 May 2006 at approximately 1045 h, six Northern Watersnakes were observed on riprap adjacent to freshwater wetlands (containing alder shrub and emergent vegetation) at Wilna Pond at the Rappahannock River Valley National Wildlife Refuge. All individuals were intertwined as a group. One individual was considerably larger than the other five snakes. The air and ground temperatures were approximately 72° F and 64° F, respectively, with sunny skies prevalent. On 23 May 2006 at approximately 1100 h, six Northern Watersnakes were also observed

intertwined as a group at a golf course pond at Fort Eustis (pond was approximately 0.26 acres and lacking aquatic or emergent vegetation). This grouping also contained one individual that was considerably larger than the others. Air temperature was approximately 65° F and sunny skies were prevalent. Initial speculation of the first observation suggested that the snakes recently emerged from hibernation and were basking to raise body temperature. Comparison of both observations led to further speculation that the groupings may have been related to mating behavior since both observations occurred within a span of three days and at locations considerably distant from one another. Mushinsky (1979. Mating behavior of the common water snake, *Nerodia sipedon sipedon*, in eastern Pennsylvania (Reptilia, Serpentes, Colubridae). Journal of Herpetology 13: 127-129) reported an aggregation in Pennsylvania involving a single female and five males. Prosser et al. (2002. Genetic analysis of the mating system and opportunity for sexual selection in northern water snakes (*Nerodia sipedon*). Behavioral Ecology 13: 800-807) reported multiple paternity in this species in which several males participated but not all contributed to the offspring. A digital photograph of the Wilna Pond observation was submitted to the VHS archives (voucher #86) by Jeanie Bishop.

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**LAURENCE MENDOZA**  
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**JOY L. WARE**  
1612 Nottoway Avenue  
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## President's Corner

I hope that this message finds all of you in good health and spirit. This past spring and summer have come and gone in a whirlwind. I was nervous about scheduling three surveys in one year but many of you came out and supported and made them a success. We encountered many new county records and documented many hundreds of animals. I had the great fortune of adding a few new captures to my life list. As great as this was, though, having the opportunity to see old friends and make some new ones made the 2006 collecting season a great one. I commented to many participants about the lack of a few regulars who usually show up each year. To all you regulars who usually come, I hope that you are well and perhaps I will have the good luck of seeing you at the fall symposium or at one of the surveys next year. The absence of your energy and talent diminishes our survey and experience. If there is anything we can do for you please let us know. There were a lot of new and young faces during this season. This gives me great hope that herpetology in Virginia is strong and thriving. Please invite a young person to come to a spring survey. There is no better place to bring a young person. He or she can be loud, they can run around, but more importantly they can have the naturalist seed planted in them. This is what the VHS should be all about...planting seeds for the future. Children today have so many things competing for their time that nature often gets left out. If they don't learn to love nature then how will they ever desire to protect and preserve it?

The VHS officers are planning to discuss possible survey sites for the 2007 collecting season at the fall business meeting. Please plan to attend the fall symposium (see the announcement on page 86 in this issue of *Catesbeiana*) and prepare to share where you would like to go collecting. Several places have already been proposed but nothing has been set in stone. The fall symposium this year is different than in years past. Members are invited to come all day to attend the various lectures, workshops, photo contest, auction, and live animal displays. The meeting will begin at 9:00 and end at 5:00. You are encouraged to bring live animals, items to donate to the auction, good stories (even if they are exaggerated), Michael Dorcas books to be signed by the author (we will have some on sale), and a little money for lunch and auction items. We are very excited about getting Michael Dorcas to be our keynote speaker this year. He has written several current books on watersnakes of North America, snakes of North Carolina, and snakes of the Southeast. Please come out and support the efforts of the VHS officers to give you an

interesting and fun fall symposium. Please bring a friend and spread the word about this event. I hope to see all of you on October 21 at Longwood University for the fall symposium. If you have any questions or concerns, please do not hesitate to email me at [frogman31@gmail.com](mailto:frogman31@gmail.com).

Respectively submitted

Jason Gibson  
VHS President

**Virginia Herpetological Society  
Treasurer's Report  
October 2006**

Balance on Hand April 2006	\$5,923.55
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Receipts:

May Dues	\$141.00
<i>Catesbeiana</i> back issues	\$ 10.00
June Dues	\$ 65.00
July Dues	\$ 60.00
August Dues	\$285.00
Total Receipts	\$561.00

Disbursements:

<i>Catesbeiana</i> 26(1)	\$420.39
University of Georgia Press (books)	\$434.19
Total Disbursements	\$854.58

Balance on Hand October 2006	\$5,629.97
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Paul Sattler  
VHS Secretary/Treasurer

Spring Meeting Minutes

**Virginia Herpetological Society  
Minutes of the Spring 2006 Meeting  
Douthat State Park  
June 30, 2006**

The meeting was called to order at 6:10 PM by Jason Gibson, VHS President. Jason started by asking the 24 persons present to introduce themselves. Next, the reports were called for.

**VHS Web Page:** John White reported that the results of the BioBlitz from the Potomac Gorge trip last week were up on the BioBlitz page. John was thanked for the excellent work displayed on the VHS Web Page over the years. Jason reported that he receives several compliments on the web page almost every week.

***Catesbeiana* Editor's Report:** Steve Roble printed 180 copies of 26(1) and mailed about 150. Steve still has a couple of articles in review, with prospects for some of these ready for the Fall issue. Several Field Notes are being prepared. Joe Mitchell may be interested in preparing an article on the History of the VHS, and perhaps a Literature Review. Since 2008 is the 50<sup>th</sup> anniversary of the VHS, there is interest in preparing a number of indices, including author and geographic, in addition to a taxonomic index. Steve reported that he can always use new artwork. There was a discussion of why the quality of the photos seems to differ considerably from issue to issue.

**Secretary/Treasurer's Report:** Paul Sattler reported that the minutes of the Fall 2005 meeting were published in *Catesbeiana* 26(1). The Treasurer's report from April listed assets of about \$5,900. Since then, an additional \$85 in dues were received and about \$420 was paid out for *Catesbeiana* 26(1), leaving a balance of about \$5,600. There are currently about 170 members, but 43 have not renewed memberships for 2006.

**Education Committee:** There was no one from the Education Committee present to give a report.

**Research Committee:** Joy Ware reported that the Committee was just beginning to discuss survey sites for 2007. The Committee is open to

ideas of how to stimulate research. There was some discussion of increasing the funding for VHS Grants in Herpetology.

**Newsletter Editor's Report:** Kory Steele reported that the first Newsletter went out in January, mostly in electronic format through email. There is some problem in sending out a mass email mailing because the Newsletter is then identified as Spam by many of the online filters. Work on the second Newsletter is beginning now.

**Fall Symposium:** Kory Steele has lined up Mike Dorcas as the keynote speaker for the October 21, 2006 Fall meeting to be held at Longwood University's new science building. Lunch will be provided at the University cafeteria for about \$5.00. Members will be able to purchase many of Mike Dorcas' books at a significant discount. A book signing opportunity will be provided. Jason stated his desire to hold an auction and to ask Mike Clifford to take the role of auctioneer. The Morning Workshops will be expanded to include numerous ones for members. There was discussion of what workshops would be most beneficial to members. The Newsletter may include a call for suggestions. A suggestion to include a live animal display to help increase public attendance was warmly received. The suggestion was made that there be a designated time for the live animal display, and possibly a photo session, with nothing else scheduled since everyone would most likely want to participate or attend this session. Suggestions for Workshops may be sent to either Jason Gibson or Susan Watson at any time, the earlier the better.

**Spring 2007 Meeting:** There were several suggestions for next year's Spring Meeting. There is a new Wildlife Management Area in Chesapeake, and Northwest River Park has nice camping facilities. There are all three species of hot snakes as well as numerous frogs and turtle species in the area. There was a suggestion to hold a combined Herp/Beetle BioBlitz since a normal BioBlitz is not currently scheduled for next year. The Chickahominy Wildlife Management Area in Charles City County was a second suggestion. There is a nearby Forestry Center which may function for facilities and accommodations. A third suggestion was southwestern Virginia because of the softshell and map turtles as well as many endemic salamanders. Finally, Seashore/First Landing State Park was mentioned.

## Spring Meeting Minutes

A brief report of the two previous surveys conducted this year was made. There were 18 members on the Herpetology team at the BioBlitz, making ours the largest team by far. There were about 20 members in attendance at the HerpBlitz held at Fairy Stone State Park.

The VHS Store (Café Press): Pattie Crane is doing an excellent job of preparing images for the Café Press store. Pattie stated that by numbers, bumper stickers were doing the best business. Jason stated that a new Committee is needed to handle the volume of work required by this enterprise and nominated Pattie Crane to chair the VHS Store Committee. Pattie was elected and requested digital photos of at least 300 dpi quality, and drawings.

Conservation Committee: This committee is still in need of a chair. Contact Jason Gibson if interested.

The Virginia Museum of Natural History is holding a Reptile weekend this Fall. Jason has told them that the VHS is interested in participating and gave them our October 21 Fall Meeting date as one weekend that should be avoided.

Jennifer Heisey from Douthat State Park welcomed the VHS to the Park for this survey. She stated that because of recent heavy rains some streams may still be swollen. She asked that the VHS work with the public encountered over the weekend to let them know we were doing a special survey and that the general public was not to do the type of activities that we were doing. Brad Kreps of The Nature Conservancy welcomed the VHS to the Warm Springs Mountain Preserve. He introduced the members to the types of habitats likely to be encountered and highlighted five areas that would likely prove productive to herpetological surveys.

Paul Sattler ended the meeting with a slide show of the known and likely amphibians and reptiles to be encountered in Bath County, based on the State Database provided by Susan Watson.

Respectively submitted  
Paul Sattler  
VHS Secretary/Treasurer

**Virginia Herpetological Society  
Fall 2006 Symposium Announcement**

The VHS fall symposium will be held on October 21, 2006 at Longwood University's science building. This year's symposium is structured differently than ones in the past. We will have speakers and workshops throughout the day for educators, the general public, and VHS members. Please plan to attend the whole day meeting. We will meet in room G12. A parking lot across from the science building should be finished by the time of the meeting so plan to park there. Driving directions and a printable campus map can be obtained from Longwood University's website at <http://www.whylongwood.com/comevisit/directions.htm>. If you have any questions or concerns, and to pre-register for the meeting, please contact Jason Gibson at [frogman31@gmail.com](mailto:frogman31@gmail.com). Pre-registration is requested but not required. We would like to have a rough idea of how many people plan to attend. Be sure to bring live animals, auction items you would like to donate, and any Michael Dorcas books that you would like to have signed. The VHS has purchased 30 copies of the recently published book entitled "Snakes of the Southeast" by Whit Gibbons and Michael Dorcas that you can purchase at the meeting (books will be sold at a discount). Contact Susan Watson at [Susan.Watson@dgif.virginia.gov](mailto:Susan.Watson@dgif.virginia.gov) to reserve your copy. Any updated information about the fall symposium will be posted on the VHS website at <http://fwie.fw.vt.edu/VHS/>.

**Symposium Schedule**

9:00 – 9:45 Kory Steele and Bonnie Keller  
"Caring for Captive Amphibians and Reptiles."

Concurrent Session 9:00 – 10:25 Mike Clifford - GPS Workshop

9:55 – 10:25 J. D. Kleopfer  
"The History and Impacts of the Pet Turtle Trade, Specifically the Red-eared Slider."

10:35 – 11:05 Kristen Cecala and Michael Dorcas  
"Effective Techniques for Field Studies of Amphibians and Reptiles."

11:05 – 12:00 Photo contest, book signing, auction, live animal displays.

## Fall Symposium Announcement

12:00 – 1:00 Lunch at Longwood University's cafeteria (cost will be \$5.59 per person). Local restaurants are also available but note that Farmville has a 11.5 % tax on meals.

1:00 – 1:45 Keynote Speaker presentation by Michael Dorcas  
“Impacts of Urbanization on Amphibians and Reptiles in the Carolinas.”

2:00 – 2:30 Norm Reichenbach, Doug Wynn, Carolyn Caldwell, Pete Johantgen, Kristy Becka, Kristin Stanford, and Gordon Burghardt  
“Chronological Account of the Restoration Program for the State Endangered Plains Garter Snake in Ohio.”

2:35 – 3:00 Joy Ware  
“The Role of Amphibians and Reptiles in Conservation Medicine.”

3:05 – 3:35 Jennifer Heemeyer  
“Evaluation of Visible Implant Elastomer in Red-backed Salamanders (*Plethodon cinereus*).”

3:40 – 4:40 – VHS Business Meeting

## DUES REMINDER

Membership in the VHS is on a calendar year basis (expires annually on December 31). Please consider renewing your membership for 2007 now (or at least before January 1) to save our treasurer the time and expense needed to mail you a renewal notice. See the last page of this bulletin for the membership application/renewal form. Save postage by paying your dues at the Fall Meeting if you are planning to attend this exciting event.

## VHS Grants in Herpetology

The purpose of Grants in Herpetology from the Virginia Herpetological Society is to stimulate and encourage herpetological research in Virginia. These grants are available in amounts up to \$500. Grant proposals should include a description of the proposed research, or in the case of surveys, of the extent of the geographic area to be surveyed and the methods that are to be used. Proposals should include a justification discussing the importance of this work to the knowledge of herpetology in Virginia and a budget showing the distribution of funds between travel, equipment, and supplies. Include a CV of the major investigator. Salary is generally not supported by these grants. Electronic submissions are encouraged.

Grant proposals should be addressed to the current President of the VHS and received by January first of each year. The President will distribute copies of the proposal to members of the Executive Council by January 15. After review, the Executive Council members will rank the various proposals and return the results of this ranking to the President by February 15. Criteria for ranking proposals will include the importance of the study to understanding herpetology in Virginia, the conservation status of the species under study, and the likelihood of the recipient being able to complete the project. The President will tally the voting and announce the top recipient(s) by March 1. The Treasurer will then be instructed to mail the requested funds to the grant recipient(s).

The results of all funded proposals must be submitted in manuscript form to the Editor of *Catesbeiana* or presented at a Fall meeting, upon completion of the study. If presented in written form the Editor has the option of either publishing the study or releasing the author from the obligation of publishing in *Catesbeiana* if the Editor so deems the particular study, due to its subject matter, to be more suitable for a publication other than *Catesbeiana*.

## MEMBERSHIP APPLICATION

I wish to  initiate  renew membership in the Virginia Herpetological Society for the year  2006  2007  2008.

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Phone \_\_\_\_\_

email address: \_\_\_\_\_

Dues Category:  Regular (\$15.00)  
 Family (\$20.00)  
 Under 18 (\$8.00)  
 Life (\$225.00)

Interests:  Amphibians  Reptiles  
 Distribution  Research  
 Captive Husbandry  
 Specifically \_\_\_\_\_

Make checks payable to the Virginia Herpetological Society and send to:  
Dr. Paul Sattler, VHS Secretary/Treasurer, Department of Biology,  
Liberty University, 1971 University Blvd., Lynchburg, VA 24502

Visit the VHS web site at: <http://fwie.fw.vt.edu/VHS/>

## Field Notes

The field notes section of *Catesbeiana* provides a means for publishing natural history information on Virginia's amphibians and reptiles that does not lend itself to full-length articles. Observations on geographic distribution, ecology, reproduction, phenology, behavior, and other topics are welcomed. Field Notes will usually concern a single species. The format of the reports is: scientific name (followed by common name in parentheses), state abbreviation (VA), county and location, date(s) of observation, observer(s), data, and observations. The name(s) and address(es) of the author(s) should appear one line below the report. Consult the editor if your information does not readily fit this format. **All field notes must include a brief statement explaining the significance of the record (e.g., new county record) or observation (e.g., unusual or rarely observed behavior, extremely early or late seasonal record, abnormal coloration, etc.). Submissions that fail to include this information are subject to rejection.** Relevant literature should be cited in the body of the text (see Field Notes in this issue for proper format). All submissions will be reviewed by the editor (and one other person if deemed necessary) and revised as needed pending consultation with the author(s).

If the field note contains information on a **new county (or state) record, verification is required in the form of a voucher specimen deposited in a permanent museum (e.g., Virginia Museum of Natural History) or a photograph (print, slide, or digital image) or recording (cassette tape or digital recording of anuran calls) deposited in the archives of the Virginia Herpetological Society.** Photographs and recordings should be sent to the editor for verification and archiving purposes; the identity of voucher specimens must be confirmed by a museum curator or other qualified person. Include the specimen number if it has been catalogued. Prospective authors of distribution reports should consult Mitchell and Reay (1999. *Atlas of Amphibians and Reptiles in Virginia*), Mitchell (1994. *The Reptiles of Virginia*), and Tobey (1985. *Virginia's Amphibians and Reptiles: A Distributional Survey*) [both atlases are available on-line on the VHS website] as well as other recent literature to determine if they may have a new county record. New distribution records from large cities that formerly constituted counties (Chesapeake, Hampton, Newport News, Suffolk, and Virginia Beach) are acceptable, but records from smaller cities located within the boundaries of an adjoining county will only be published if the species has not been recorded from that county. Species identification for observational records (e.g., behavior) should be verified by a second person whenever possible.

## PHOTOGRAPHS

High contrast photographs (prints, slides, or digital images) of amphibians and reptiles will be considered for publication if they are of good quality and are relevant to an accompanying article or field note. Prints should be on glossy paper and no larger than 5 x 7 inches. Published photographs will be deposited in the archives of the Virginia Herpetological Society.